

We claim:

1 *Ab 31* 1. A method for forming an occlusion within a vascular cavity having  
2 blood disposed therein comprising the steps of:

3 endovascularly disposing a wire near an endovascular opening into  
4 said vascular cavity;

5 disposing a distal tip of said wire into said vascular cavity to pack said  
6 cavity to mechanically form said occlusion within said vascular cavity about said  
7 distal tip; and

8 detaching said distal tip from said wire to leave said distal tip within  
9 said vascular cavity,

10 whereby said vascular cavity is occluded by said distal tip, and any  
11 thrombus formed by use of said tip.

1 2. The method of Claim 1 wherein said step of detaching said distal  
2 tip from said wire comprises the step of mechanically detaching said distal tip from  
3 said wire.

1 3. The method of Claim 1 where said wire and tip are used within a  
2 microcatheter and where in said step of detaching said distal tip from said wire, said

3        wire and tip are longitudinally displaced within said microcatheter, said  
4        microcatheter having a radio-opaque proximal marker, said wire and tip having  
5        collectively a single radio-opaque marker, said displacement of said wire and tip  
6        moving said single radio-opaque marker to the proximity of said proximal marker on  
7        said microcatheter when said tip is fully deployed.

1                  4. The method of Claim 1 wherein said step of disposing said tip into  
2        said vascular cavity to pack said cavity comprises the step of disposing a tip having a  
3        plurality of filaments extending therefrom to pack said cavity.

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1                  5. The method of Claim 1 wherein said step of disposing said tip into  
2        said vascular cavity to pack said cavity comprises the step of disposing a long flexible  
3        tip folded upon itself a multiple number of times to pack said cavity.

1                  6. A method for forming an occlusion within a vascular cavity having  
2        blood disposed therein comprising the steps of:

3                  endovascularly disposing a wire within a microcatheter near an  
4        endovascular opening into said vascular cavity, said microcatheter having a distal tip  
5        electrode;

6 disposing a distal tip of said wire into said vascular cavity to pack said  
7 cavity to form said occlusion within said vascular cavity about said distal tip by  
8 applying a current between said electrode on said distal end of said wire packed into  
9 said cavity and said distal tip electrode on said microcatheter; and

10 detaching said distal tip from said wire to leave said distal tip within  
11 said vascular cavity.

12 whereby said vascular cavity is occluded by said distal tip, and any  
13 thrombus formed by use of said tip.

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1                   7. A wire for use in formation of an occlusion within a vascular cavity  
2                   used in combination with a microcatheter comprising:

3 a core wire; and

4                   a detachable elongate tip portion extending said core wire for a  
5 predetermined lineal extent adapted to being packed into said vascular cavity to  
6 form said occlusion in said vascular cavity and coupled to said distal portion of said  
7 core wire,

1           8. The wire of Claim 7 wherein said elongate tip portion is a long and  
2       substantially pliable segment adapted to be multiply folded upon itself to  
3       substantially pack said vascular cavity.

1           9. The wire of Claim 7 wherein said elongate tip portion is a segment  
2       adapted to be disposed in said vascular cavity and having a plurality of filaments  
3       extending therefrom to substantially pack said vascular cavity when disposed  
4       therein.



1           10. The wire of Claim 7 wherein said microcatheter has a pair of  
2       radioopaque markers disposed thereon and wherein said core wire has a  
3       radioopaque marker disposed thereon, said marker on said core wire being  
4       positioned in the proximity of one of said pair of markers on said microcatheter  
5       when said core wire is deployed, said other marker on said microcatheter indicating  
6       the distal end of said microcatheter.

1           11. The wire of Claim 7 where said core wire and tip are coupled by  
2       polyester.

1           12. A microcatheter system for use in formation of an occlusion  
2        within a vascular cavity comprising:

3           a microcatheter having a distal end adapted for disposition in the  
4        proximity of said vascular cavity, said distal end having an electrode disposed  
5        thereon;

6           a conductive wire disposed in said microcatheter and longitudinally  
7        displaceable therein, said wire comprising:

8           a core wire; and



9           an elongate tip portion extending said core wire for a predetermined  
10       lineal extent adapted to being packed into said vascular cavity to form said occlusion  
11       in said vascular cavity and coupled to said distal portion of said core wire by means  
12       of applying a current between said tip portion and said electrode on said  
13       microcatheter when said tip portion is disposed into said vascular cavity,

14           whereby endovascular occlusion of said vascular cavity can be  
15       performed.

1           13. A method for forming an occlusion within a vascular cavity having  
2        blood disposed therein comprising the steps of:

3           disposing a body into said cavity to substantially impede movement of  
4        blood in said cavity; and

5 employing said body in said cavity to form said occlusion within said  
6 vascular cavity,

7 whereby said vascular cavity is occluded by said body.

1                   14. The method of Claim 13 wherein said step of disposing said body  
2                   in said vascular cavity comprises the step of packing said body to substantially  
3                   obstruct said cavity.

1                   15. The method of Claim 14 where said step of packing said cavity  
2 with said body comprises the step of obstructing said cavity with a detachable  
3 elongate wire tip multiply folded upon itself in said cavity.

1                   16. The method of Claim 13 wherein said step of disposing said body  
2 into said vascular cavity comprises disposing in said vascular cavity means for  
3 slowing blood movement in said cavity to initiate formation of said occlusion in said  
4 cavity.

1                           17. The method of Claim 14 where said step of packing said cavity  
2 with said body comprises the step of obstructing said cavity with a body having a  
3 compound filamentary shape.

1                   18. The method of Claim 13 wherein said step of employing said body  
2                   in said vascular cavity to form said occlusion comprises the step of applying an  
3                   electrical current to said body.

1                   19. The method of Claim 13 wherein said step of employing said body  
2                   in said vascular cavity to form said occlusion comprises the step of mechanically  
3                   forming said occlusion in said body.

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1                   20. The method of Claim 13 wherein said step of employing said body  
2                   in said vascular cavity to form said occlusion comprises the step of applying an  
3                   electrical current to said body and simultaneously mechanically forming said  
4                   occlusion in said body.

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1                   21. The method of Claim 18 where said step of applying an electrical  
2                   current to said body comprises the step of applying an electrical current between  
3                   said body and an proximate electrode carried on a microcatheter used for disposing  
4                   said body into said cavity.

1                   22. A wire for use in formation of an occlusion within a vascular  
2                   cavity used in combination with a microcatheter comprising:

3                   a core wire;

4                   a detachable elongate tip portion extending said core wire for a  
5                   predetermined lineal extent adapted to being packed into said vascular cavity to  
6                   form said occlusion in said vascular cavity and coupled to said distal portion of said  
7                   core wire, said tip portion including a first segment for disposition into said cavity  
8                   and a second segment for coupling said first portion to said core wire, said second  
9                   segment being adapted to be electrolyzed upon application of current; and

10                  an insulating coating disposed on said first segment, said second  
11                  segment being left exposed to permit selective electrolysis thereof,

12                  whereby endovascular occlusion of said vascular cavity can be  
13                  performed.

1                   23. A method for forming an occlusion within a vascular cavity having  
2                   blood disposed therein comprising the steps of:

3                   endovascularly disposing a wire near an endovascular opening into  
4                   said vascular cavity;

5                   disposing a distal tip of said wire into said vascular cavity to pack said  
6                   cavity to form said occlusion within said vascular cavity about said distal tip;

7 forming an electrothrombosis in said vascular cavity by applying  
8 current through said distal tip; and

9 mechanically detaching said distal tip from said wire to leave said  
10 distal tip within said vascular cavity,

11 whereby said vascular cavity is occluded by said distal tip, and any  
12 thrombus formed by use of said tip.

1 24. A method for forming an occlusion within a vascular cavity having  
2 blood disposed therein comprising the steps of:

3 endovascularly disposing a wire within a microcatheter near an  
4 endovascular opening into said vascular cavity;

5 disposing a distal tip of said wire into said vascular cavity to pack said  
6 cavity to form said occlusion within said vascular cavity about said distal tip by  
7 applying a current to said distal tip packed into said cavity; and

8 mechanically detaching said distal tip from said wire to leave said  
9 distal tip within said vascular cavity,

10 whereby said vascular cavity is occluded by said distal tip, and any  
11 thrombus formed by use of said tip.

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